DIGITAL'S ENVIRONMENTAL PRODUCTS
PROTECTING YOUR BUSINESS'S BOTTOM LINE

digital

	UPS HA3000	UPS HA1000	Standby UPS	PCS +	PDS +	PCS	CVC	TVSS	EMS	REMS
	Protects Against Blackouts Conditions Distributes	Protects Against Blackouts Conditions Distributes	Protects Against Blackouts Suppresses	Conditions Distributes Monitors	Distributes Monitors	Conditions Distributes	Conditions Distributes	Suppresses	Environmental Monitoring	Environmental Monitoring Software
High Energy Transients, Impulses and Spikes	●	●	●	●	—	●	●	●	—	—
High/Low Voltage, Sags, Surges	●	●	—	●	—	●	●	—	—	—
Phase Rotation	●	●	—	●	●	●	—	—	—	—
Improper/Inadequate Wiring or Grounding	●	●	—	●	●	●	●	—	—	—
Electrical Noise	●	●	●	●	●	●	●	—	—	—
Power Outage	●	●	●	—	—	—	—	—	—	—
Environmental Monitoring	—	—	—	●	●	—	—	—	●	●
Software Link with REMS/EMS	●	●	●	●	●	●	—	—	N/A	N/A
System Type	3-Phase and 1-Phase Mid-Range to Large Systems	1-Phase 3-10 kVA Systems	1-Phase up to 1.4 kVA PCs and MicroVAX Systems	3-Phase Mid-Range to Large Systems	3-Phase Mid-Range to Large Systems	3-Phase Mid-Range to Large Systems	Small to Mid-Range Systems	All Digital Systems	All Digital Systems	All Digital VAX Systems

PROTECTING YOUR BUSINESS'S BOTTOM LINE

You know what your computer system is worth to your organization. It—and the precious data that it generates, stores, and transmits—are the lifeblood of your business. But did you also know that your computer system and its data are constantly under seige—threatened by power pollution like spikes and surges, dips and sags, brownouts, and the ultimate computer enemy, the complete power blackout? Then there are the hazardous environmental conditions external to your power supply, like water damage, fire, extreme heat, even vandalism.

These hazards can not only damage your expensive system hardware, they can also threaten system uptime, which can lead to lost data, lost productivity, and potential financial disaster.

Digital understands that your computer system is a major investment, and that trouble-free, continuous system availability is essential to your operation's success. After all, we've been in the business of selling—and using—computers for thirty years. And, although our computers are among the best-engineered and most reliable on the market today, we know they're not immune to the dangers of power-related and environmental damage. That's why, over the years, we have made a commitment to provide our customers with the products they need to protect the major investment that their computer systems represent.

Because all of our environmental products are designed by Digital for Digital's systems, you're assured that they are totally compatible with all of our computers, both now and in the future. Perhaps even more important, they are up to handling the power demands all computers require. In addition, they are engineered to Digital's exacting standards, and backed by Digital's unparalleled service and support offerings. When you protect your Digital computer investment by purchasing our environmental products, you also buy the security and peace of mind that one-stop service and support can bring.

COMPREHENSIVE POWER PROTECTION AND MONITORING CAPABILITY

Digital's comprehensive line of environmental power products protect your computers from "dirty" power hazards, and from the disastrous effects of no power at all. Within this wide selection of environmental power products, we have solutions for every size and style of Digital computer—from the VAXcluster system in the controlled environment of the computer room to the VAXstation system on the office desktop.

Our environmental monitoring hardware and software products monitor your computer environment to warn against hazards such as flooding, fire, extreme temperatures, and vandalism. With the environmental monitoring hardware, you can monitor a single system, a whole computer room, even a whole computer facility. With the addition of our new remote environmental monitoring software, one person can do all of this monitoring from either a local or a remote location.

The following pages contain a portfolio of Digital's superior solutions to power-related problems and environmental hazards. We've organized the products by function, to make it easier for you to find the solution you need for the particular problem or application you have. We start with blackout protection, followed by our full line of power conditioning and distribution products, our surge suppression products, and our environmental monitoring hardware and software.

Building Security and Monitoring Station

3-Phase Uninterruptible Power System	UPS	❶
Power Conditioning System Plus	PCS+	❷
VAX Remote Environmental Monitoring Software *(VMS Layered Product)*	REMS	❸
Water Detector		❹
J-Box		❺
Building Interface Adapter		❻
Temperature Probes		❼

Remote Facility Computer Room

Research and Development

Computer Room

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* The HA1000 can replace multiple Standby Uninterruptible Power Systems to a kVA capacity of 3 to 10.

HA3000 3-PHASE UNINTERRUPTIBLE POWER SYSTEM
KEEPS YOUR BUSINESS UP AND RUNNING WHEN THE LIGHTS GO DOWN

Digital's new HA3000 3-Phase Uninterruptible Power System (UPS) protects high-end and mid-range computers against the disastrous effects of a power blackout. It provides the ultimate power protection that your critical applications demand.

In the event of a power outage, the HA3000 UPS provides battery backup power to your computer system for about 15 minutes. This allows you to ride through the outage, power down in an orderly fashion, or switch to an alternative power source automatically, without any interruption to your computer operations.

What's more, the HA3000 UPS also guards your computer systems and valuable data against everyday power aberrations—voltage surges, spikes, high energy transients, frequency shifts, electrical noise, and low voltage conditions. When "dirty" power— or no power at all—threatens your computer operation, the HA3000 UPS assures a continuous supply of clean, controlled power to keep your systems, and your business, up and running smoothly.

The HA3000 UPS is highly reliable, because it has been designed and tested specifically to handle the non-linear load requirements of computer systems. It is micro-processor controlled, and its transistorized Pulse Width Modulation (PWM) inverter technology further increases system performance and reliability.

The HA3000 UPS boasts a small footprint, sealed, maintenance-free batteries, and quiet and efficient operation, as well as a user-friendly Status and Control Panel. The panel's touch pad and liquid crystal display provide instructions for operating the system, for performing internal test routines, for monitoring incoming power and for diagnosing system problems.

Maintenance of the HA3000 UPS is easy and efficient because of its online diagnostic capabilities and modular design. The HA3000's Maintenance Bypass function allows isolation of the system for routine maintenance and repair without any loss of power to your computer system.

The HA3000 UPS is available in a variety of kVA and voltage ratings to meet most computer room electrical requirements. Several system enhancing options are also available, including a Distribution Cabinet which provides an efficient method of cable distribution throughout the computer room, and a Remote Status Panel which allows you to monitor HA3000 operation from up to 300 feet (100 meters) away. There is also an Input Isolation Transformer, which provides an additional layer of protection when in Maintenance Bypass mode. The Input Total Harmonic Distortion (THD) Reduction filter, another option, reduces any power distortions being transmitted back to the main power line.

TECHNICAL SPECIFICATIONS:

Model # HA32x-xx, 20-80 kVA, 480V or 208V (input), 60Hz

HA3000 Benefits

- Protects high-end and mid-range computer systems against a power blackout

- Provides automatic static bypass to assure uninterrupted power to computer system

- Features microprocessor-controlled operations and diagnostics to maximize system uptime

- Offers small footprint and quiet operation for easy fit into the computer room environment

- Provides easy, menu-driven operating instructions and monitoring procedures

HA1000 SINGLE-PHASE UNINTERRUPTIBLE POWER SYSTEM
A VERSATILE POWER SOLUTION FOR SMALL TO MID-RANGE DIGITAL COMPUTERS

The HA1000 Single-Phase Uninterruptible Power System provides reliable blackout protection, plus power conditioning and distribution. Equally at home in an office setting or a computer room environment, it is the UPS of choice when you need compact, portable power protection for your critical applications running on small to mid-range Digital computers.

In the event of a complete power blackout, the HA1000 UPS automatically obtains power from its storage battery and relays it to your computer system, without any interruption of the power supply to your critical load. You can ride out the outage, switch to any auxiliary power source, or perform a controlled shutdown of your system without any danger to your valuable data.

In addition to battery backup protection, the HA1000 will ensure that precision, conditioned AC power reaches your computer continually. Its solid state inverter/charger filters and regulates the power from the commercial power source, protecting your system and its data from everyday power aberrations. A wide range of receptacles are also available for your power distribution needs.

Like the HA3000 UPS, the HA1000 has been specifically designed and tested to handle the non-linear load requirements of computer systems, so it is highly reliable, even at full load.

The HA1000 is also a very versatile member of Digital's UPS family. Because it is available in 3, 5, and 10kVA sizes, it is adaptable for use with a wide range of computer systems. In addition, its compact design, quiet operation, sealed, maintenance-free batteries, and portability via casters make it equally suitable for use on the office floor or in a computer room environment.

The HA1000 UPS is easily installed by Digital Customer Services personnel. Once installed and running, it is fully automatic and easy to maintain and service.

Standard HA1000 features include an Emergency Power Off (EPO) switch, a control panel for monitoring and display, and a communications interface which permits monitoring of the system from a remote location. A Remote Emergency Power Off (REPO) switch is also available as an option.

TECHNICAL SPECIFICATIONS:

Model HA10xx-xx, 3, 5, & 10 kVA, 120, 208 & 240V (input), 220, 230, & 240V (input) 50Hz

HA1000 BENEFITS

- Available in 3, 5 and 10kVA sizes to accommodate a wide range of power requirements
- Provides automatic transfer (via static switch) of the critical load to utility power in the event of UPS system shutdown or overload
- Supports 100 percent non-linear (computer) loads without derating
- Adaptable to either a computer room or office floor environment
- Easy to install, maintain and service

H7229 STANDBY UNINTERRUPTIBLE POWER SYSTEM
POWER PROTECTION FOR YOUR SMALLER SYSTEMS

The H7229 Standby Uninterruptible Power System is a self-contained system that supplies battery power to keep the data on your desktop systems through MicroVAX systems safe from disruptive power failures—even a complete power outage. In the event of a power loss, the inverter switches to battery power in as little as four milliseconds, assuring no disruption to your data. Digital's Standby UPS will keep your system up and running for at least 12 minutes at a full-rated load, or much longer if you decrease the load, allowing you sufficient time to perform an orderly shutdown.

In addition to its battery backup function, the H7229 also features built-in surge suppression. This protects the connected computer against damage caused by high energy transients created by lightning or man-made disturbances.

All of this comes in a well-engineered, attractive, small footprint unit on casters for easy unpacking and placement. It fits easily under an office desk, and can be quickly repositioned if the need arises.

H7229 BENEFITS

- Provides full load power to smaller computer systems during power blackouts
- Suppresses electrical impulses or transients in standby mode
- Easy to use and install
- Occupies little space; blends with other office equipment

TECHNICAL SPECIFICATIONS:

Model H7229-AD, 1.4 kVA, 120V, 60 Hz

H7318 POWER CONDITIONING SYSTEM *PLUS*
CONDITIONING AND DISTRIBUTION, *PLUS* MONITORING CAPABILITIES

When you need power conditioning and distribution for your high-end systems, Digital's H7318 Power Conditioning System *plus* (PCS+) fits the bill. The PCS+ provides superior protection for your important applications.

CONDITIONING. The PCS+ supplies clean, regulated power to your computer system, eliminating problems from sags, dips, surges, and other voltage variations. It also clips high energy transients, spikes, and impulses on the AC power line. It regulates output and input voltage, and its built-in isolation transformer provides maximum protection against electrical noise.

DISTRIBUTION. The PCS+ is structured to maximize system uptime by evenly distributing power to your system and its peripherals through flexible cabling. It eliminates problems caused by inadequate wiring or grounding, electrical noise, or incorrect phasing. The modular design of the PCS+ system's output circuit breaker panel and its flexible cabling system allow you to make distribution changes easily.

BUILT-IN EXPANSION AND RELOCATION PLAN. With the PCS+, you can move, expand, or reconfigure your computer system without incurring costly charges associated with customized conventional wiring. You can take your wiring with you—in one compact unit. The flexibility of the PCS+ allows you to make changes easily, in contrast to the complexity of wiring schemes needed to adapt conventional wiring to changing computer environments.

MONITORING CAPABILITIES. The "plus" in the Power Conditioning System *plus* (PCS+) stands for enhanced microprocessor-based monitoring capability. In addition to all the capabilities featured above, the PCS+ houses a built-in microprocessor that provides realtime monitoring, allowing you to further automate the management of your computer room. Forty-three internal and sixty-nine external sensors are available to provide constant checks of your computing environment.*

H7317 POWER DISTRIBUTION SYSTEM *PLUS*
DISTRIBUTION WITH A MONITORING *PLUS*

Perhaps "dirty" power is not a problem in your location, or a UPS system already provides clean, regulated power for your computer system. In that case, the Power Distribution System *plus* (PDS+) can supply you with all the advantages of the PCS+ except voltage regulation and surge suppression. It offers the same power distribution, advanced power monitoring capabilities* and ease of expansion as the PCS+ unit.

*See the Monitoring section of this brochure for further information on the monitoring capabilities of the PCS+ and the PDS+ units.

TECHNICAL SPECIFICATIONS:

Model H7318-xx, 15-100 kVA; 480, 208V (input) 60Hz; 380/415V (input) 50Hz

Model H7317-xx, 15-100 kVA; 600, 480, 208V (input) 60Hz; 380/415V (input) 50 Hz

POWER CONDITIONING SYSTEM PLUS

H7318 Benefits

- Eliminates power problems due to incorrect phasing, inadequate wiring, and electrical noise in high-end computer systems
- Evenly distributes power to computer and peripherals
- Provides microprocessor-enhanced realtime monitoring
- Offers flexibility to accommodate system growth

H7317 Benefits

- Evenly distributes power to computer and peripherals
- Offers microprocessor-enhanced realtime monitoring
- Provides flexibility to accommodate system growth

H7228 POWER CONDITIONING SYSTEM
THE ECONOMICAL POWER CONDITIONING AND DISTRIBUTION ALTERNATIVE

The H7228 Power Conditioning System (PCS) provides all of the capabilities of the PCS + unit except monitoring. It supplies clean, regulated power to your computer system, and distributes power evenly. It is also just as easily moved, expanded, and reconfigured as the PCS +.

If you do not need the monitoring capabilities built into the PCS +, the PCS offers an economical alternative to your power conditioning and distribution needs.

H7225/H7226 CONSTANT VOLTAGE CONDITIONERS
POWER CONDITIONING FOR YOUR SMALL TO MID-RANGE SYSTEMS

Digital's constant voltage conditioners (CVCs) provide a compact, economical answer to the power conditioning needs of smaller Digital computer systems. The H7225 series CVC protects the MicroVAX, VAXstation, PC, or other small system. The H7226 series CVC is designed to regulate the power to our mid-range systems such as the VAX 8250/8350.

Both the H7225 and the H7226 CVCs provide optimum and continuous operating voltage to your computer. They correct fluctuations in the power lines, protect against sags and surges, and against attenuating incoming noise spikes. Regulation response time for the CVCs is 25 milliseconds or less. Following fluctuation, voltage correction is complete within one and one-half cycles.

Every Digital CVC unit is plug-compatible with computers manufactured by Digital or other vendors. The CVCs are customer-installable, and easy to disconnect and to reinstall when moving your computer system.

CONSTANT VOLTAGE CONDITIONER

H7228 BENEFITS

- Eliminates power problems due to incorrect phasing, inadequate wiring, and electrical noise in high-end computer systems
- Evenly distributes power to computers and peripherals
- Offers flexibility to accommodate systems growth

H7225/H7226 BENEFITS

- Ensures consistent supply of clean, regulated power to smaller computer systems
- Provides built-in short circuit protection
- Offers easy installation and relocation
- Provides for plug-compatible operations

TECHNICAL SPECIFICATIONS

Model H7228-xx; 15-100 kVA; 480, 208V (input) 60Hz; 380/415V (input) 50Hz

Model H7225-xx; 5-3.0 kVA 120V (input) 60Hz

Model H7226-xx; 5.0-10 kVA, 240V 208V (input) 60Hz

H7007 TRANSIENT VOLTAGE SURGE SUPPRESSORS
EXTRA INSURANCE AGAINST LIGHTNING'S DAMAGING IMPULSES

Lightning poses a severe threat to your computer system. The sudden electrical impulses lightning generates can send excessive voltage through power lines or data lines. This excessive voltage can lead to damaged computer equipment or an irretrievable loss of valuable data.

If your facility is located in an area of severe thunderstorm activity, Digital's Transient Voltage Surge Suppressors (TVSS) are a wise investment, because they provide the best protection you can buy against the electrical disturbances that lightning generates.

Digital offers a versatile family of H7007 TVSS products designed to provide the power and data line protection you need, whether for a single PC, or for an entire computer system with building-to-building data lines. If the voltage remains stable in your facility, and your only concern is to protect against sudden spikes and impulses, the TVSS products offer a superior solution alone. However, TVSS products are also fully compatible with Digital's 3-Phase and 1-Phase Uninterruptible Power Systems (UPS), PCS+/PDS+ and PCS units, and can be used in conjunction with these products to provide an additional level of protection against lightning damage.
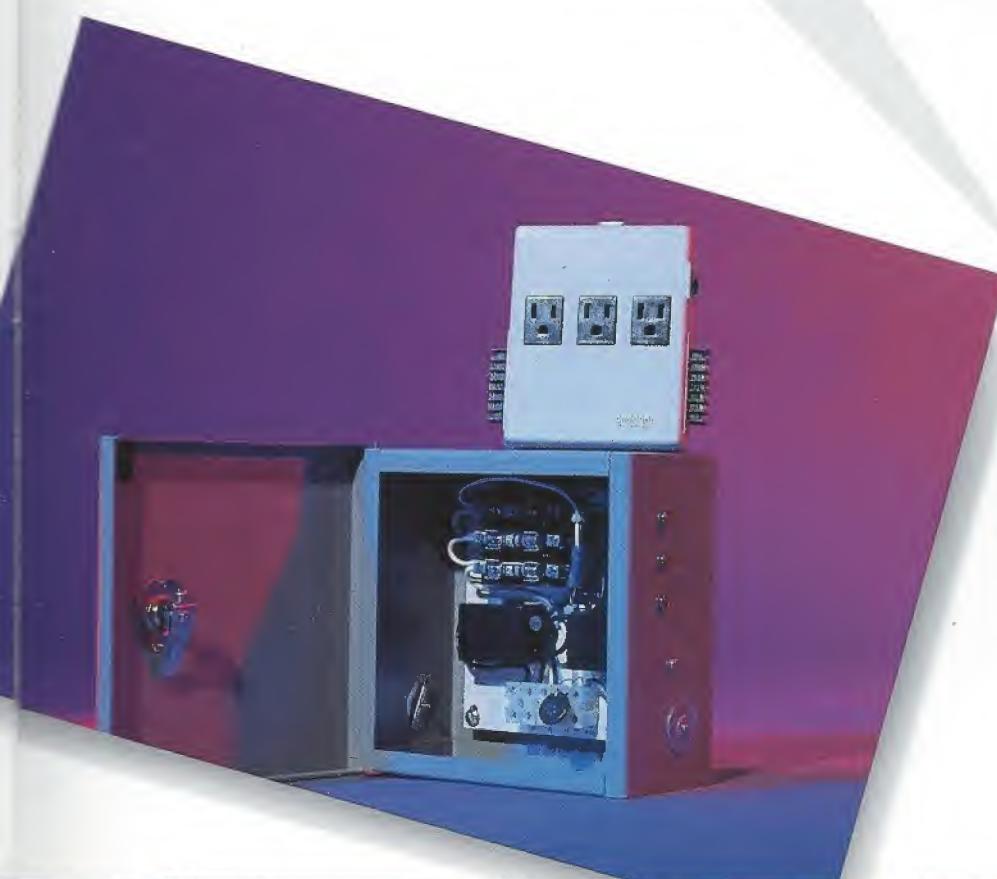
Quick action is critical when correcting the high voltage conditions that lightning causes, and Digital's TVSS products are up to the task. They feature a response time to full clamping voltage of 50 nanoseconds or less, with instant recovery. They provide high current phases and neutral protection while eliminating any holdover current. In addition, most TVSS units are user-installable, and installation is quick and easy.

H7007 BENEFITS

- Provides optimum protection against lightning-generated electrical impulses
- Features a response time of 50 nanoseconds or less
- Eliminates holdover current
- Offers compatibility with HA3000/ HA1000 UPS, and PCS+/PCS and PDS+ units
- Protects RS232/RS423 data lines

TECHNICAL SPECIFICATIONS:

Model H7007-xx, 120-480V

H731x FAMILY PRODUCTS
BECAUSE PROBLEM POWER ISN'T ALL YOU NEED TO WORRY ABOUT

Power problems are just one of the environmental hazards that can threaten your valuable computer equipment and data. Imagine, for example, what a fire in your computer room, or the flooding and extreme heat caused by malfunctioning air conditioners, could do to your system. Or the destruction that vandals breaking into your facility could cause.

Digital knows that these are real hazards, so we carry a comprehensive line of environmental monitoring hardware and software to protect your computer system against them.

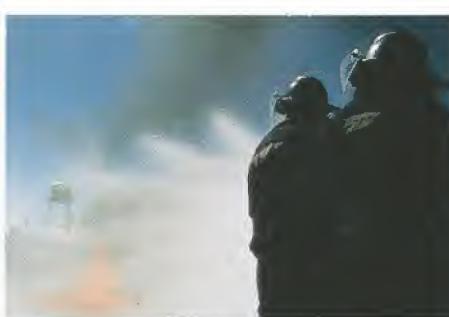### H7317 PDS *PLUS* AND H7318 PCS *PLUS*

The H7317 Power Distribution System Plus (PDS +) and the H7318 Power Conditioning System Plus (PCS +) not only condition and distribute power— they also monitor the quality of that power, their own internal operation, and alert you to potentially damaging environmental conditions before they can cause damage.

The PCS + and PDS + provide 43 internal power sensors and 69 external environmental sensors to provide constant checks of your computing environment and to shut down your computer system if conditions exceed the thresholds you have set.

External power conditions monitored by the PCS + and PDS + include: ground and neutral current, output current and voltage, the percent FLA (full load amps), phase rotation errors, line frequency, and apparent and true power. Internal monitoring checks of unit temperature, battery charging voltage, and internal voltage supply insure the reliability of the PCS +/ PDS + units.

Using a variety of options such as a Remote Sensing Unit, a Building Interface Adapter, Water Detectors, and Temperature Probes, the PCS + and PDS + allow you to examine environmental conditions instantly, up to 5,000 feet away, and to react quickly to adverse conditions before they become dangerous.

Up to eight PCS + or PDS + units can be connected together in your computer room to allow expanded monitoring from a single location—up to 896 probes. Probes can be preprogrammed with global commands that allow for inter-system response to alarm conditions.

H7310 Environmental Monitoring System

The Surveillance Specialist

Digital's new H7310 Environmental Monitoring System (EMS) provides another alternative to your environmental surveillance needs. The H7310 is strictly a monitoring system, so it is economically priced. If your power conditioning and power distribution needs are already met with existing equipment, the H7310 is a logical choice to minimize the potential threats of environmental hazards.

The EMS is an advanced, microprocessor-based monitoring system built to handle the total electronic environmental surveillance of any computer site and its supporting equipment. Using from 1 to 112 external sensors/probes, it provides realtime sampling of physical environmental changes up to 5, 000 feet away and compares these changes to user-established thresholds. Implementing both a visual display and an audio warning on your connecting terminal, the EMS allows your quick response to equipment and data-threatening environmental events.

Up to eight EMS units can be daisy-chained together to form a monitoring network. EMS units can also be daisy-chained to existing PCS + and PDS + units to provide an economical expansion of an existing monitoring network.

H7310 Benefits

- Provides early warning system to guard against damage from environmental threats
- Provides monitoring and central reporting for multiple temperature sensors and external alarm systems
- Offers interconnectability of up to 8 EMS or "plus" units
- Allows system preprogramming of user-defined abnormal environmental conditions

Technical Specifications:

Model H7310-xx, 120/240V, 50/60Hz

VAX Remote Environmental Monitoring Software (REMS)
Expands the Capability of Your Environmental Monitoring System

REMS software takes you one step closer to running your computer rooms in the "dark," with no system operator in attendance. Because it allows every H731x product to be seen from one VAX terminal, one person alone can monitor every room in your network—from either a local or remote location. Even without a system operator in attendance, REMS software offers you the peace of mind that comes from knowing that your computer equipment is guarded against environmental damage.

A REMS network can contain up to eight daisy-chained H731x-family units, which you can program from any terminal on the network. One of the H731x units becomes the master; the remaining seven become the slaves.

All you need to run REMS is one VAX processor—a MicroVAX II, a VAX 9000, or any VAX/VMS system in between.

REMS records all conventional environmental probe data specified by the operator, and communicates the data every 100 milliseconds. The operator can display any probe at any time, and the indexed sequential file on the VAX records all the data collected. The VAX operator, systems manager, or field service engineer can retrieve and use that data, generating reports either online or in paper form. And the presence of historical data files permits the detection of environmental patterns which may lead to equipment malfunctions.

By using REMS to consolidate environmental monitoring in one place, you can simplify the management of your computer facility. You can create consistency and reliability in environmental monitoring and data collection.

REMS Benefits

- Allows one operator, onsite or remote, to monitor computer room's environmental conditions
- Responds automatically and in real time to environmental emergencies
- Automatically relays alarm signals, sends mail, and spawns user defined VMS subroutines
- Continually collects environmental data in sequential file for later interrogation and report generation

Order Numbers:

Model QL-VI5A9-AA

Model QA-VI5A4-HA

FOR MORE INFORMATION

Digital has a comprehensive line of environmental products that have been designed and tested to stand up to our own intensive use. When you buy environmental products from Digital, you are buying them from a vendor that doesn't just sell them—but uses them every day.

For more information on how these products can protect your own computer system and its valuable data, ask Digital to help you configure your potential EP solution. Let Digital's environmental products go to work for you too.